CONTENTS OF VOLUME XVIII.

NUMBER LII.

Page.

ART. I. On the first Hurricane of September 1853, in the Atlantic; with a Chart; and Notices of other Storms: by W. C. REDFIELD, - - - - - - - - - 1

II. Account of a Rainbow caused by Light reflected from Water; by Prof. E. S. SNELL, - - - - - - - - - 18

III. On Changes of Sea-Level effected by existing Physical Causes during stated periods of time; by ALFRED TYLOR, F.G.S., 21

IV. On the Phosphate of Iron and Manganese from Norwich, Mass., by Dr. J. W. MALLET, - - - - - - - 33

V. On the Homœomorphism of Mineral Species of the Trimetric System; by JAMES D. DANA, - - - - - - - 35

VI. On certain Physical Properties of Light, produced by the combustion of different Metals, in the Electric Spark, refracted by a Prism; by DAVID ALTER, M.D., - - 55

VII. Chinese and Aztec Plumagery; by D. J. MACGOWAN, M.D., 57

VIII. Binocular Microscope; by Dr. E. D. NORTH, - - 61

IX. Mechanical Action of Heat; by W. J. MACQUORN RANKINE, 64

X. On the Resistance experienced by Bodies falling through the Atmosphere; by Prof. ELIAS LOOMIS, - - - - - 67

XI. The Brandon Tornado of January 20th, 1854; by Prof. O. N. STODDARD, - - - - - - - - - - - 70

XII. Considerations on the Group of Small Planets situated between Mars and Jupiter; by M. U.-J. LE VERRIER, - - 80

XIII. On Electric Induction—Associated cases of Current and Static Effects; by Professor FARADAY, D.C.L., F.R.S., - 84

XIV. Reclamation of Borocalcite, as distinct from a mixture of minerals, found near Iquique, South Peru; by A. A. HAYES, M.D., 95

XV. On the present condition of the Crater of Kilauea, Hawaii; by Rev. TITUS COAN, - - - - - - - - - 96

XVI. Note on the genus Buckleya; by ASA GRAY, M.D., - 98

XVII. On a mode of giving permanent flexibility to brittle specimens in Botany and Zoology; by Prof. J. W. BAILEY, - 100

Page.

XVIII. Caricography; by Prof. C. DEWEY, - - - - - 102

XIX. Reviews and Records in Anatomy and Physiology; by WALDO I. BURNETT, M.D., - - - - - - - - 104

XX. Correspondence of M. JEROME NICKLÈS: Doctor Roux, 114.—Admiral Roussin: Beautems Beaupré, 115.—Victor Mauvais, 116.—The Paris Observatory, 117.—Electricity: Table Turnings, 119.—Works of Arago: Poisonous effects of Carbonic Acid, 120.—Blowpipe with a continued Blast, 121.—Use of Oxygen in Asphyxia: Local Anesthesis: Photography and Stereoscopy: Bath for bringing out Photographs, 122.—A new red dye for dying wool, 123.

SCIENTIFIC INTELLIGENCE.

Chemistry and Physics.—Thermic Researches on Hydroelectric Currents: On the double refraction temporarily produced in isotropic bodies, and on the relation between mechanical and optical elasticity, 124.—On a new Filtering Apparatus, by Professor J. P. COOKE, 127.

Mineralogy.—Chemical Contributions to Mineralogy, by JAMES D. DANA: Chlorite Section of Hydrous Silicates, 128.—Wöhlerite: Keilhauite, 130.

Botany and Zoology.—The Micrographic Dictionary, a Guide to the Examination and Investigation of the Structure and Nature of Microscopic Objects, by J. W. GRIFFITH, M.D., F.L.S., and ARTHUR HENFREY, F.R.S., F.L.S., &c., 131.—Botany of the Voyage of the Herald, by B. SEEMANN: Dr. Hooker's Flora of New Zealand: Botany of the U. S. Exploring Expedition under Capt. Wilkes; Phanerogamia, by A. GRAY, 132.—Dr. Wallich: On preserving the Balance between the Animal and Vegetable Organisms in Sea Water, by ROBERT WARRINGTON, 133.

Astronomy.—New Planets:—Bellona; Amphitrite, 137.—New Comet of 1854: Annular Solar Eclipse of May 26, 1854, 138.—Eclipse of the Sun, May 26, 1854, at Yale College, 142.

Miscellaneous Intelligence.—List of Papers read at the meeting of the American Association for the Advancement of Science, 143.—Abstract of a Meteorological Journal kept at Beloit College, for the year 1854, by Prof. S. P. LATHROP, M.D., 146.—The climate of San Francisco, etc., by Dr. HENRY GIBBONS, 148.—Mammoth Trees of California, 150.—Recent Earthquake Shocks in California, by W. P. BLAKE: Memorial to the United States Congress, on establishing a Geographical Department of the Library of Congress, 151.—On Gold and Platinum of Cape Blanco, by W. P. BLAKE: Supposed Corallines of the Colorada Desert: Additions to the Article on Chinese Plumagery, by D. J. MACGOWAN: Brazil, 156.—*Obituary.*—Robert Jameson, 156.—Elementary Geology, by EDWARD HITCHCOCK, D.D., LL.D.: Archives de Physiologie de Therapeutique et d'Hygiène: Lectures on Histology, by JOHN QUEKETT: Illustrations of the Birds of California, Texas, Oregon, British and Russian America, by JOHN CASSIN, 157.—Astronomical Observations, made under the direction of Lieut. M. F. MAURY, U. S. N., during the year 1847: Field-Book for Railroad Engineers: Annual Report of the Superintendent of the U. S. Coast Survey, 158.

List of Works, 159.

NUMBER LIII.

Page.

ART. XXI. On the comparative Expenditure of Heat in different forms of the Air-Engine; by Prof. FREDERICK A. P. BARNARD, 161

XXII. On the first Hurricane of September 1853, in the Atlantic; with a Chart; and Notices of other Storms: by W. C. REDFIELD, - - - - - - - - - - 176

XXIII. Researches upon Arseniuretted and Antimoniuretted Hydrogen, and their relations to Toxicology; by Professor RAPHAEL NAPOLI, - - - - - - - - - - 190

XXIV. On some of the Crystalline Limestones of North America; by T. S. HUNT, - - - - - - - - - - 193

XXV. Documentary Publications and Science in the Coast Survey Report for 1853, - - - - - - - - - 200

XXVI. On the use of Hydrogen Gas and Carbonic Acid Gas, to displace Sulphuretted Hydrogen in the analysis of Mineral Waters, &c.; by Prof. W. B. ROGERS and Prof. R. E. ROGERS, 213

XXVII. On Changes of the Sea-Level effected by existing Physical Causes during stated periods of time; by ALFRED TYLOR, F.G.S., - - - - - - - - - - 216

XXVIII. On Fuchs's method for the determination of Iron; by J. R. BRANT, - - - - - - - - - - 227

XXIX. On Stibiotrizincyle and Stibiobizincyle, two new compounds of Zinc and Antimony, with some remarks on the decomposition of water by the alloys of these metals; by JOSIAH P. COOKE, Jr., - - - - - - - - - 229

XXX. On the Nature of Forces; by Lieut. E. B. HUNT, - - 237

XXXI. Contributions to Mineralogy; by JAMES D. DANA, - - 249

XXXII. Notice of the Life and Writings of the late Dr. Waldo Irving Burnett; by JEFFRIES WYMAN, M.D., - - - 255

SCIENTIFIC INTELLIGENCE.

Chemistry and Physics.—On the continuity and force of the current of the magneto-electric machine, 264.—Galvanic reduction of metallic chromium, 266.—On the losses of weight which minerals undergo by heat: Illustrations of Chemical Homology, 269.—

Mineralogy and Geology.—Notice of von Kobell's paper on Series of Isomorphous and Homœomorphous Forms, by JAMES D. DANA, 271.—On the Chloritoid of Bregratten in the Tyrol, and Clinochlore of Markt Leugast in Bayreut, by Prof. VON KOBELL: On the Alteration of Scapolite, by G. v. RATH, 272.—Report on the Salt and Gypsum of the Preston Salt Valley of the Holston River, Virginia, by Prof. H. D. ROGERS, 273.—The Metallic Wealth of the United States described and compared with that of other Countries, by J. D. WHITNEY, 274.—City of San Salvador destroyed by an Earthquake, 277.

Botany.—Hooker's Icones Plantarum: J. D. Hooker's Flora of New Zealand: Genera Plantarum Floræ Germanicæ Iconibus et Descriptionibus Illustrata: Floræ Danicæ Supplementi fasciculus I, 1853, 284.—The Micrographic Dictionary, by Drs. GRIFFITH and HENFREY: Linnæa; ein Journal für die Botanik; herausgegeben von D. F. L. von SCHLECHTENDAL: Annales des Sciences Naturelles, etc., redigée pour la Zoologie par M. MILNE EDWARDS, pour la Botanique par MM. AD. BRONGNIART et J. DECAISNE, 285.—Mammoth Trees of California, 286.—On the Fossil Plants found in Amber, by Professor GŒPPERT, 287.

Astronomy.—New Comet: Orbital Elements of Bellona and Amphitrite, 290.

Miscellaneous Intelligence.—New Process for Desulphurizing Metals: Separation of Nickel and Cobalt by Wöhler's process, 291.—Researches on the Tides of the White Sea, by M. TALYZINE: Application of the electric Telegraph to the determination of the difference of longitude, 292.—Paris Observatory: On manufactured Sea-Water for the Aquarium, by P. H. GOSSE, A.L.S., 293.—Observations, economical and sanatory, on the employment of Chemical Light for artificial Illumination, by Dr. E. FRANKLAND, F.C.S., 295.—Mechanical Action of Heat, by F. A. P. BARNARD, 300.—Siluria, The History of the Oldest Known Rocks containing Organic Remains, with a brief sketch of the Distribution of Gold over the Earth, by Sir R. I. MURCHISON, G.C. St.S., &c.: Elementary Chemistry, Theoretical and Practical, by GEORGE FOWNES, F.R.S.: Manual of Natural History for the use of Travellers, by ARTHUR ADAMS, M.R.C.S., F.L.S., &c., WILLIAM DALFOUR BAILIE, M.D., F.R.S.E., and CHARLES BARRON, 301.—The Microscope and its application to Chemical Medicine, by LOVELL BEALE, M.B.: Report on the Geology of the Coast Mountains and part of the Sierra Nevada, by Dr. JOHN B. TRASK: Natural History Review, 302.—Bibliographical Notices by M. JEROME NICKLÈS:—Théorie Générale des effets dynamiques de la Chaleur, par F. REECH, 302.—Précis des œuvres mathematiques de Fermat et de l'arithmetique de Diophante par BRASSINE: Traité de mecanique par M. DUHAMEL: Uranographie ou Traité élémentaire d'astronomie par FRANCŒUR: Leçons de Cosmographie par MM. HARANTE et LAFITTE, 303.—Chimie photographie par MM. BARRESWILL et DAVANNA: Recherches cliniques sur les Eaux-Bonnes par E. CAZENAVE: Des accidents sur les chemins de fer par E. WITH, 304.

NUMBER LIV.

Page.

ART. XXXIII. On the Tides at Key West, Florida, from observations made in connexion with the United States Coast Survey; by A. D. BACHE, Superintendent. (With six Plates.) 305

XXXIV. On the Geographical Distribution of Crustacea; by JAMES D. DANA, - - - - - - - - - - 314

XXXV. Notes on Map Projections; by Lieut. E. B. HUNT, - 326

XXXVI. On the Educational Uses of Museums; by EDWARD FORBES, F.R.S., &c., - - - - - - - - - 340

XXXVII. On the Cause of the Aurora Borealis; by Professor A. DE LA RIVE, - - - - - - - - - - 353

XXXVIII. Notice of three ponderous masses of Meteoric Iron at Tucson, Sonora; by CHARLES UPHAM SHEPARD, M.D., - 369

Page.

XXXIX. Reëxamination of American Minerals: Part IV—Boltonite; Iodid of Silver; Copiapite; Owenite; Xenotime; Lanthanite; Mangano-magnesian Alum; Apophyllite; Schreibersite; Protosulphuret of Iron; Cuban; by J. Lawrence Smith, M.D., - - - - - - - - - - 372

XL. Correspondence of M. Jerome Nicklès—Academy of Sciences, 381.—On the Phenomenon called "Spirit-rappings:" Electricity—Electro-chemical action, 382.—Pyro-electric currents: On the electricity produced during the evaporation of salt-water, 384.—Economical illumination by Electric light: Decomposition of Kyanite by galvanic heat, 385.—Electro-magnetic Machine: Magnetism by Rotation, 386.—Experiments with reference to firing mines by electricity: Various Memoirs, 387.—Dilatation and Contraction of Metallic Plates: New Greek Fire, 388.—Coupled Cannons, 389.—Photography—Heliographic engraving: Collodion: Société d'Encouragement pour l'Industrie Nationale, 390. Economical Lamp for obtaining high temperatures, 391.—

XLI. Observations on the Nomenclature of the metals contained in Columbite and Tantalite; by Prof. A. Connell, - - 392

XLII. Murchison's Siluria, - - - - - - - - 394

XLIII. On the Chemical Composition of Clintonite; by Geo. J. Brush, - - - - - - - - - - 407

XLIV. Contributions to Mineralogy; by Dr. F. A. Genth, - 410

SCIENTIFIC INTELLIGENCE.

Chemistry and Physics.—On the so-called Benzoëoxyd and some other conjugate compounds: Researches on different questions in Organic Chemistry—Composition of tannic acid, 412.—Decomposition of brucine by nitric acid: Hydrocyanaldin: Production of propionic acid in fermentation: On some combinations of hydrargyro-methyl and hydrargyrethyl: Constitution of quinine, 413.—Artificial production of oil of cinnamon: Artificial production of taurine: Contributions to the chemical history of Glucina, 414.—On a new Test for Zirconia, by G. J. Brush: On the Electricity of the Atmosphere, by M. L. Palmieri, 415.—A Vacuum made by Chemical means, by M. C. Brunner, 416.

Mineralogy and Geology.—Contributions to Mineralogy, by James D. Dana, 417.—Beiträge zur Kenntniss der Eisenhohofen-Schlacken, nebst einem geologischen Anhange, (on Iron Furnace Slags, etc.), by J. F. L. Hausmann, 421.—Temperature of the interior of the Earth: A System of Mineralogy, comprising the most Recent Discoveries, by James D. Dana, 424.—Lanthanite, 427.

Botany and Zoology.—Victoria Regia; or the Great Water Lily of America; by John Fisk Allen: Plantæ Junghuhnianæ; Enumeratio Plantarum quas in Insulis Java et Sumatra detexit Fr. Junghuhn: Steudel's Synopsis Plantarum Glumacearum, 428.—

Seemann's Botany of the Voyage of the Herald: Notice of the death of Dr. Fischer of St. Petersburgh, M. Moricand of Geneva, and Philip Barker Webb, Esq., 429.—Description of a New Species of Cryptopodia from California, by JAMES D. DANA, 430.

Astronomy.—New Planets: New Comet, 430.

Miscellaneous Intelligence.—Correspondence of M. JEROME NICKLÈS—Death of Dr. Lallemand and of Melloni: Weights and Measures: Researches on Colored Impressions produced by the Chemical action of Light, 431.—Protection against Hail, 432.—Diseases of Plants: Dimorphism, 433.—Coloring matter of Flowers, 434.—Various Memoirs, 435.—Manufacture of Powder, 436.—Stereoscopy: Photography: Photographs of monuments in Judea: New Collodion, 437.—Impression by heat, or Thermotypy: Electric illumination, 438.—Notice of the "Fountain of Blood" in Honduras, 439.—Nature doing her own engraving: Mount Ararat and places in the Caspian Basin: Zodiacal Light, 440.—Notes on California, by W. P. BLAKE: Homœography: Sketch of the Life and Labors of Dr. Thomas Thomson, F.R.S., &c., 441.—Prefatory Notice of Laurent's Méthode de Chemie, by J. B. BIOT, 443.—Smithsonian Contributions to Knowledge, 445.—Verd Antique Marble: Mastodon: British Association: Ueber das Iridium und seine Verbindungen, 447.—The Chemistry of Common Life, by JAMES F. A. JOHNSTON, M.A., F.R.S., F.G.S., &c.: Scenery, Science and Art, being Extracts from the Notebook of a Geologist and Mining Engineer, by Prof. D. T. ANSTED, M.A., F.R.S., &c.: Souvenirs d'un Naturaliste, par A. DE QUATREFAGES: The Principal Forms of the Skeleton, and of the Teeth, by Professor R. OWEN, F.R.S., &c.: Principles of Comparative Physiology, by WM. B. CARPENTER, M.D., F.R.S., &c. 448.—Human Physiology, by WORTHINGTON HOOKER, M.D.: Science and Mechanism Illustrated by Examples in the New York Exhibition, 1853-54, edited by E. R. GOODRICH, Esq., aided by Professors HALL and SILLIMAN, &c.: History of the Fishes of Massachussetts, by DAVID HUMPHREYS STORER: The Principles of Animal and Vegetable Physiology, by J. STEVENSON BUSHNAN, M.D.: System der thierischen Morphologie, von Dr. J. VICTOR CARUS, 449.—Atlas von Nord America, nach den neuesten Materialen, von HENRY LANGE: Of the Plurality of Worlds, an Essay: More Worlds than One, by Sir DAVID BREWSTER: Sixty-seventh Annual Report of the Regents of the University of the State of New York, 450.—Seventh Annual Report of the Regents of the University of the State of New York on the Condition of the State Cabinet of Natural History, &c.: Popular Lectures on Drawing and Design, by WM. MINNIFIE, 451.

List of Works, 451.

Index, 452.

ERRATA.

P. 19, transfer last line to bottom of p. 18.

An error on p. 65 is corrected on p. 300.

P. 415, line 23 from top, dele "all but two of."

Vol. XVII, p. 287, line 10 from top, for "6 P. M.," *read* "10 P. M.:" same page, line 21 from bottom, for "59° 27," *read* "127° 9."